Leisa Prowse
CONSULTING

Somerset Dam Improvement Project

Community Reference Group Meeting 2

April 2025

Contents

1 Introduction

The second meeting of the re-established Community Reference Group (CRG) for the Somerset Dam Improvement Project (SDIP) was held on Wednesday 2 April 2025. The meeting was held at the Somerset General Store between 4:00pm and 6:00pm.

1.1 Workshop purpose

The purpose of the meeting was to provide:

- an update on recent communication, procurement and early works construction
- a briefing about dam capability and operations.

Seqwater's presentation is included at Appendix A.

1.2 Attendees

Meeting 2 was attended by six CRG members:

- Rosemarie Allan
- Bebe Jecis
- David Kenneally
- Gary Love
- Don McConnell
- Dale Sinclair.

Due to inclement weather, apologies were received from Bronwyn Davies and Tim Mason.

Vicki Sweedman was unable to attend.

The workshop was also attended by six members of the project team, including:

- two Leisa Prowse Consulting (LPC) representatives
- four Seqwater representatives.

1.3 Welcome

Seqwater and LPC welcomed CRG members to the second CRG meeting for the SDIP project. The LPC facilitator briefly summarised key points from the Terms of Reference, including:

- Participation in the CRG is voluntary.
- The CRG is not a decision-making group and consensus is not required.
- The CRG aims to represent a diverse range of community viewpoints.
- Members are encouraged to represent their community or stakeholder group's views in the room.
- Members must not speak to the media on behalf of the group without Seqwater's authorisation.
- No proxies will be accepted.
- If you cannot attend a meeting, let Seqwater know that you are an apology.

The LPC facilitator briefly outlined key requirements for members of the group, which are to:

- treat each other with respect
- allow other people to be heard, listen respectfully, and do not speak over each other
- protect the privacy of other group members and treat them with respect when discussing the project or the CRG with others
- consider all relevant information during discussions
- consider other people's point of view

- act reasonably, with honesty and in good faith
- undertake agreed actions within the specified time
- attend all meetings and site tours or provide your apologies
- share information about the project with other community members and bring community feedback to CRG meetings.

Seqwater confirmed that no confidential information would be shared during this meeting.

2 Communications update

Seqwater provided an update on recent community engagement activities, which included:

- the distribution of an e-newsletter in December 2024
- an information session in December 2024
- the launch of the 'Be Safe for Fun's Sake' water safety campaign at the Spit
- a tour of Somerset and Wivenhoe dams with the Somerset Regional Council Mayor and Councillors
- a Somerset Grazing Lessee Forum.

Seqwater also provided a summary of the results of a recent Community Sentiment Survey. As part of this summary, Seqwater acknowledged that survey responses for Somerset and Wivenhoe dams were combined and, as a result, may not accurately reflect the views of the Somerset CRG participants.

During a discussion about whether the results of the Community Sentiment Survey resonated with CRG members, the following observations and responses were shared.

Seqwater explored whether a letterbox drop was a preferred communication method, as reflected in the survey results. In response, CRG members noted that a letterbox drop was potentially effective when:

- residents did not have the technology to access digital communication
- electricity and internet supply might be interrupted during extreme weather events.

However, CRG members also indicated that:

- adverse weather could limit access to letterboxes
- adverse weather could damage material collateral delivered to letterboxes
- some residents may not have letterboxes.

Seqwater indicated they are investigating options to introduce opt-in SMS updates as a communication method during the project. The Seqwater team highlighted the potential advantages of this communication method, including the ability for updates to be provided in real time. In response, CRG members indicated they were supportive of SMS updates as an effective communication channel.

CRG members indicated their primary topic of interest in relation to the Somerset Dam Improvement Project did not relate to 'impacts on water supply'. Instead, CRG members mentioned an interest in the height of the dam, and potential traffic and construction impacts.

Seqwater noted that 'impacts on water supply' was likely to have been a top survey response in relation to topics of interest because:

- community members are concerned about the security of water supply during dam upgrades
- the amount of water in a dam impacts on its visual appeal which could have flow on impacts to tourism and therefore the local economy
- any increases to water supply would impact upstream communities.

3 Procurement and construction

Seqwater provided updates on site activities and investigations, including:

- environmental investigations
- baseline noise monitoring
- heritage investigations
- geotechnical investigations.

Seqwater also discussed the construction of a shed to store the cores taken as part of the geotechnical investigations, and the establishment of temporary operations facilities.

A CRG member asked where the core shed is located. Seqwater provided the location of the core shed and explained that it will remain there permanently.

The Seqwater team provided an update on procurement for the various manufacturing and design aspects of the project.

In response to a question from a CRG member, Seqwater indicated that they have not yet confirmed the location of the quarry for the project. Pre-feasibility assessments are underway to determine if the existing quarry at Somerset Dam is a viable supply source for raw materials. Seqwater noted that local labour and manufacturing have been used for past projects, and, if possible, they will endeavour to achieve the same for this project.

Seqwater provided an update on the assessment of their houses in the village and their initial plan to refurbish four to five of these buildings in the near future, with the remainder still under assessment.

Seqwater provided an overview of the work that is projected to occur in 2025, including:

- the geotechnical drilling program
- establishment of facilities
- the hydromechanical design and associated works
- the roads and civil early works.

In response to a question from a CRG member, Seqwater indicated that the site for the workers camp has not been chosen, but locations in the vicinity of the project site, including near Esk, are under early consideration. Seqwater noted that they are aware of the need to balance impacts of a worker's camp with the local community and are exploring how to minimise these impacts, while also considering positive opportunities.

A CRG member asked whether the temporary worker accommodation cabins that have been constructed in the village (at the Seqwater campground) are associated with the project. Seqwater project team members indicated that they were unaware of this accommodation. However, they noted it was likely placed by the dam operations team to support dam operations during flood events. (*Post meeting note: this was subsequently confirmed to be the case*.)

Seqwater noted their preference to source local materials and labour wherever possible. However, they indicated that they need to understand the contractor requirements before they can confirm whether this is possible for this project.

Seqwater noted that they are still in the design, planning and approval phases. They also indicated that the project is complex.

Seqwater committed to sharing images associated with the development of the dam design at the next CRG meeting.

4 Dam capability and operations

Seqwater provided a detailed briefing about the existing and proposed capability and operation of the dam. This included information about:

- regulatory requirements
- dam structure, water storage and water security
- regulated releases
- water supply operations
- flood operations
- dam safety
- dam arrangement
- climate change and hydrology modelling.

In response to CRG member questions about the complexity of the project, Seqwater referred to the:

- inter-connection between Somerset Dam and Wivenhoe Dam
- uniqueness of the dam design
- need to manage the varying condition of the rock foundation that the dam is built on.

In response to CRG member questions about the drain holes beneath the dam monolith and the need to upgrade them, Seqwater explained:

- that drain holes help dam engineers to measure water pressure pushing up on the bottom side of the dam and release water into the dam gallery drainage system to relieve any pressure
- that piezometers have been installed to ensure accurate pressure readings
- the new drain holes will work in concert with the original drainage system, which was constructed to the standard of the day
- water pressure can increase the stress on existing foundations
- the dam foundations are being engineered to consider the latest information regarding the dam foundation.

A CRG member noted that the dam was currently discharging via one of the valves (the regulating cone valve) and asked was this to relieve pressure. Seqwater advised it was not, and the releases are associated with dam operational releases from Somerset Dam to Wivenhoe Dam.

In response to CRG questions about the sluices and sluice gates, Seqwater advised that:

- The sluice gates open and close to let water through the sluice tunnels.
- There is a shaft that the gates move up and into when the sluice gates are open. The internal sluice shafts can be accessed from the top of the dam.
- The sluice gates will be replaced as part of the upgrade process. They will be removed from the internal shafts, two at a time, via access points. The gates will be temporarily isolated by bulkheads adjacent to the dam wall that will block the inlet flows. These bulkheads will allow the installation of the new hydraulic gates, which will be operated when water needs to be let out via the sluice tunnels.
- A CRG member asked whether the hydroelectric plant will be removed. Seqwater explained that the hydroelectric plant is not currently operational, and the piping will be removed during the dam upgrade and repurposed. The future of the hydroelectric plant will depend upon the dam design, still to be completed.

A CRG member asked whether the crest height of the dam had been determined. Seqwater advised that the spillway level will be similar to the existing. The dam wall crest height outside of the spillway will ultimately be determined and advised when the spillway flowrate and design is assessed, as part of the upgrade design.

A CRG member asked whether the design had been tested with the engineers who were at the dam in the lead-up to ex-tropical cyclone Alfred crossing the coast. Seqwater explained that:

- the design is still in its early stages
- an engineering firm has been engaged to assist with the next stages of design, and they are highly experienced national and international dam designers.

Seqwater noted that Somerset Dam is similar to an existing dam in the United States of America. (*Post meeting note: Norris Dam.*)

Seqwater explained that the upgrade is being implemented to bring the dam up to modern engineering standards, including dam safety considerations, and to address the risk of flooding caused by extreme and rare weather events in Queensland. Seqwater advised the probability of this type of event occurring is very low, and that the dam is required to be constructed to safely manage these types of events. Seqwater noted that previous floods (such as those that occurred in 1974, 2011 and 2022) were not classified as meeting the criteria for rare to extreme weather events.

In response to questions about whether upgrades to the dam and the dam crest would cause the water level to rise, Seqwater indicated the project would not have an effect on the operational full supply level in the dam post completion, allowing restoration to its original full supply level (i.e. the pre 2017 level). Seqwater indicated that water levels during flood events would remain the same as they were before the upgrades for all events other than the rare to extreme, under the rules of the current flood operation manual.

CRG members highlighted community concerns about water levels in the dam changing. They recommended Seqwater share some of the information contained in the briefing to address these concerns, for example the diagram that shows that the dam crest will be raised but not the spillway level nor the dam full supply water level (beyond restoring it).

5 Meeting close

To close-out the meeting, the LPC facilitator asked CRG members to share their key takeaways from Meeting 2. These takeaways were:

- no change to the water level
- houses are getting upgraded
- designs are progressing.

The key takeaway discussion prompted questions from a CRG member about whether grazing lands on the edge of the dam would be taken away from graziers. Seqwater advised that the upgrade does not directly impact existing lease arrangements around Lake Somerset. Seqwater's property team is regularly communicating with lessees in the area and any future need for land would be dealt with on a case-by-case basis.

The LPC facilitator suggested CRG members contact Seqwater if they required further information or had any questions after the meeting.

Seqwater advised the topic of the next meeting would be communicated to the CRG prior to the meeting. Seqwater also discussed the possibility of a dam tour and asked whether the tour could be conducted during business hours. CRG members responded that they would be happy to do a tour during business hours if they received enough notice.

The next meeting will be held on Wednesday 11 June 2025.

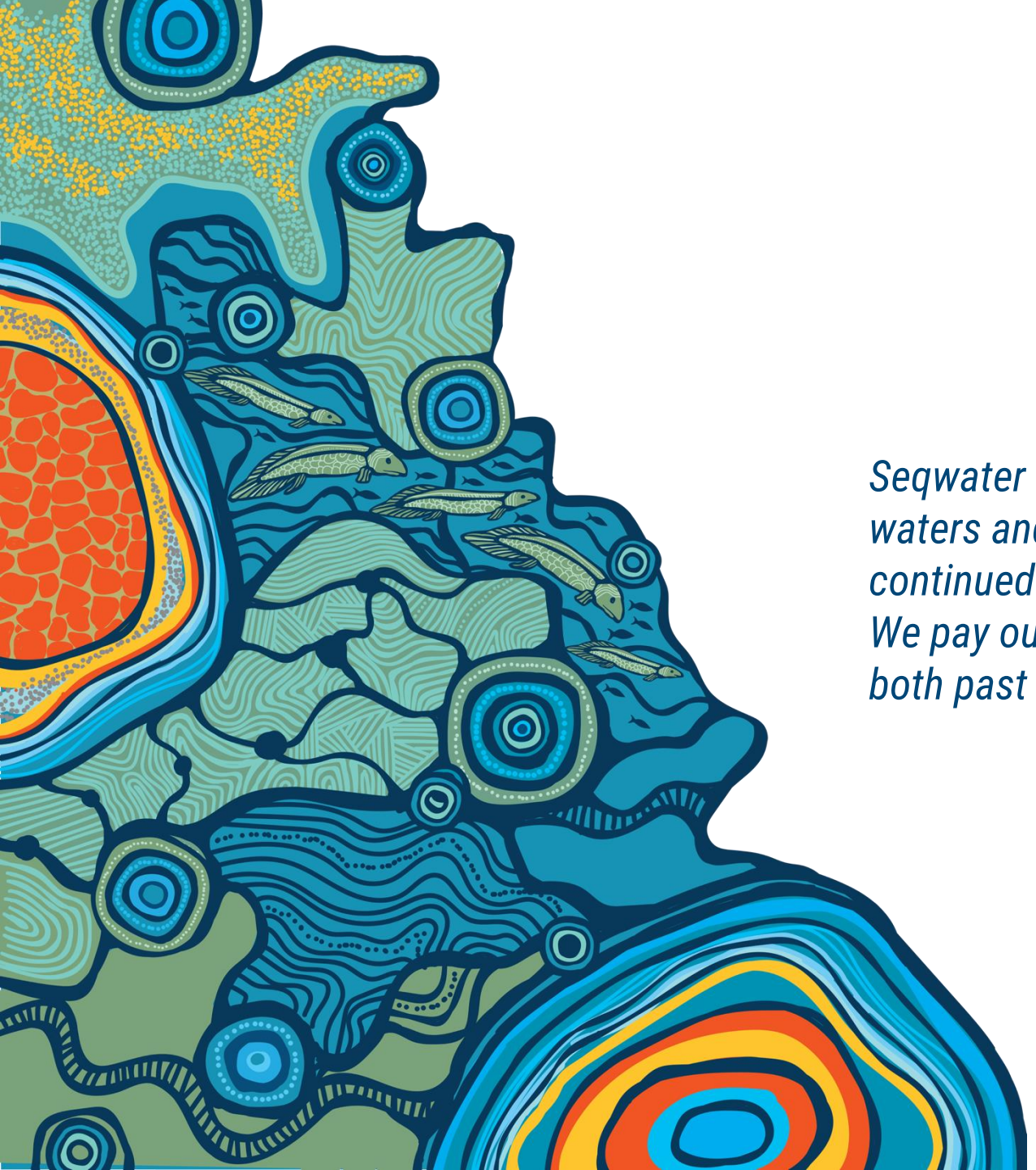
Appendix A: Presentation

Somerset Dam Improvement Project

Community Reference Group
Meeting 2

Wednesday 2 April 2025

seqwater
WATER FOR LIFE



Seqwater acknowledges the Traditional Owners of these waters and surrounding lands and recognises their continued connection to the land, waters and community. We pay our respects to them and their cultures and to elders both past and present.

Agenda

Item	Details

Outstanding actions	• Photo consent forms
	• Actions to close out:
	  • Plans for quarry
	  • Lease changes
	  • Spillway and dam wall

Communications update	• Survey and sentiment results
Procurement and construction update	• Contract awards • Procurement • 2025 schedule lookahead
Dam capability and operations	• Regulatory requirements of upgrade • Purpose of Somerset Dam • How the dam operates and capability of the Somerset Dam Improvement project
Conclusion	• Key takeaways • Next meeting

Outstanding actions

Communications update

Recent community engagement

- December E-Newsletter
- December Info Session
- ‘Be Safe For Fun's Sake’ Launch Event – The Spit
- Somerset Regional Council – Mayor and Councillors visit to Wivenhoe and Somerset Dam
- Somerset Grazing Lessee Forum - Kilcoy

Community Sentiment Survey

- Aged 18+ years
- Live within 50km of the dam*
- 220 sample size for Wivenhoe and 112 for Somerset
- Completed November/early December 2024
- Used online panels and phone calls

*Note: Somerset and Wivenhoe survey results were combined due to proximity of the projects.

Community Sentiment Survey results

Highlights

- Preferred channels of communication:
  1. Letter in mailbox
  2. Social media
  3. Email communication
- Preferred frequency of information:
  1. Quarterly
- Topics of interest:
  1. Impacts on water supply
  2. Traffic impacts
  3. Progress updates
  4. Impacts to environment
  5. What the planned upgrades are

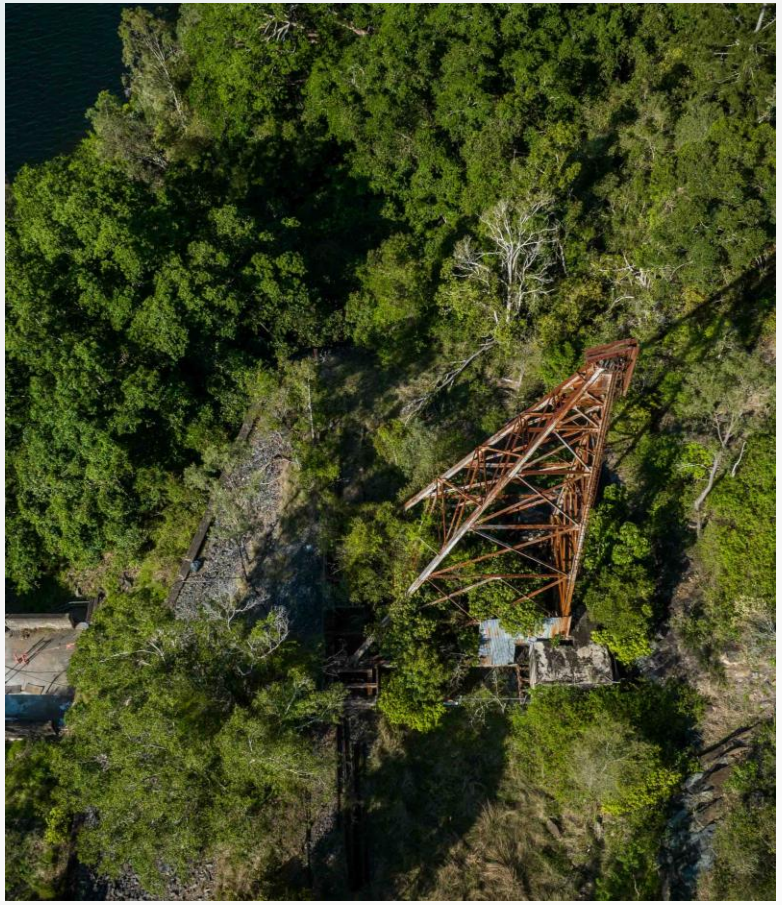
Procurement and Construction update

Recent site activities & investigations

Environmental Investigations

translocated *Coleus leiperi*

Baseline noise monitoring



Heritage investigations

Recent site activities

Geotechnical Investigations

Core Shed

Temporary Operations Facilities

Contract awards

Gate manufacturing

- Awarded: AVK Australia
- Included: supply of 26 new sluice and other gates including extension pipework, hydraulics, electrical and controls equipment
- Gates to be manufactured at factory in Spain
- Removal of crest radial gates and cable tail tower will precede installation of the new gates

Roads and Civil design

- Awarded: AECOM
- Included:
  1. Design of a long-term, temporary coffer dam
  2. Design of the temporary and permanent access road works including a permanent realignment of Esk-Kilcoy Road and a new access to the dam wall from Wivenhoe-Somerset Road
  3. A pre-feasibility study for the quarry.

Interim Drainage Curtain design

- Awarded: GHD
- Included: Design for over 100 drain holes deep beneath the rock foundations of the existing dam wall. Drain holes will be drilled in a cross-cross formation.

Engineering Services Partner

- Awarded: AECOM
- Included: major contract to deliver engineering consultancy services on the Dam Improvement Program and other dam infrastructure projects planned to be completed by Seqwater now and into the future.
- Commencement from early 2025.

Procurement

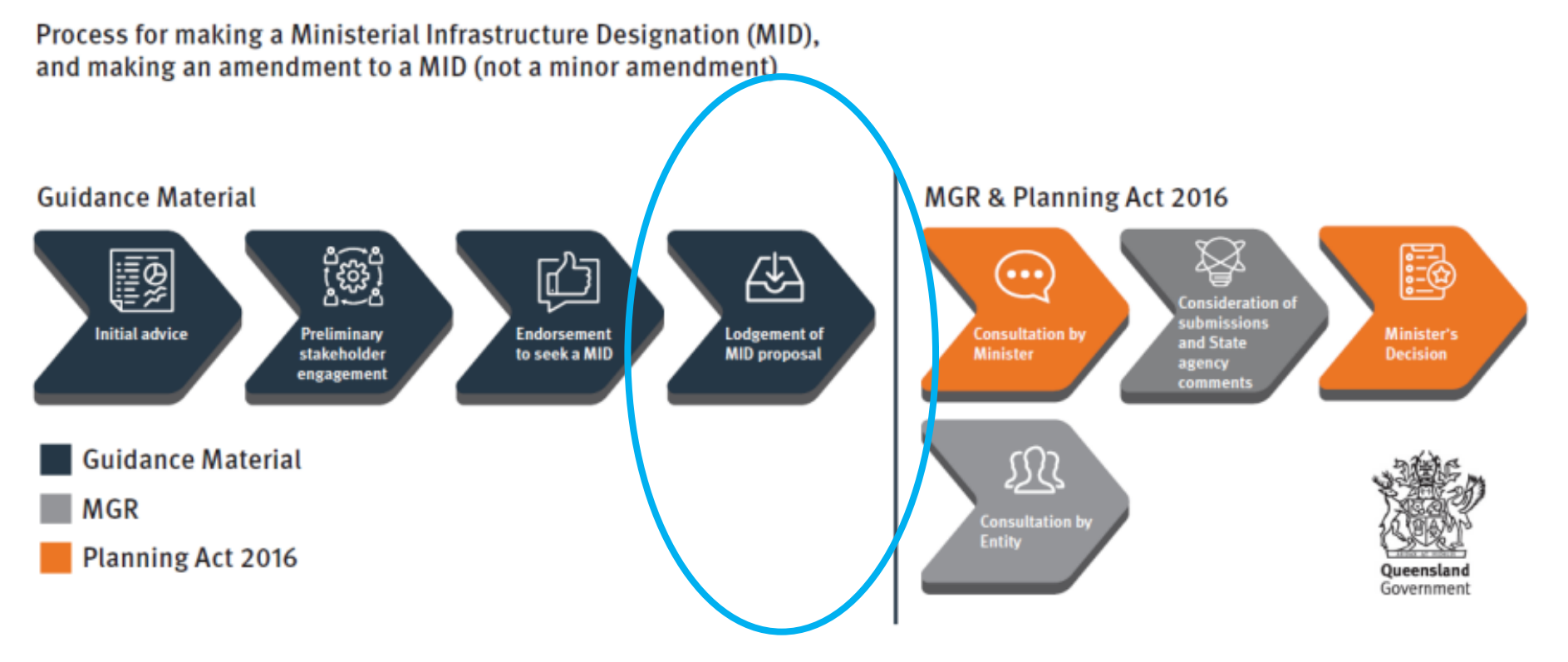
Somerset Dam House Refurbishments

- House assessments completed December 2024.
- Progressed tender for refurbishments to market late February 2025.
- Scope includes refurbishing 4 buildings, plus an additional provisional extra dwelling (subject to budget).
- Strategy for the remaining dwellings to be assessed.

Approvals

Ministerial Infrastructure Designation

- MID endorsed for lodgement with Department of State Development, Infrastructure and Planning
- Formal consultation period will follow lodgement – 20 business days (date TBC – likely May to July 2025)



2025 lookahead

JAN

2025

DEC

Quarter	Activity

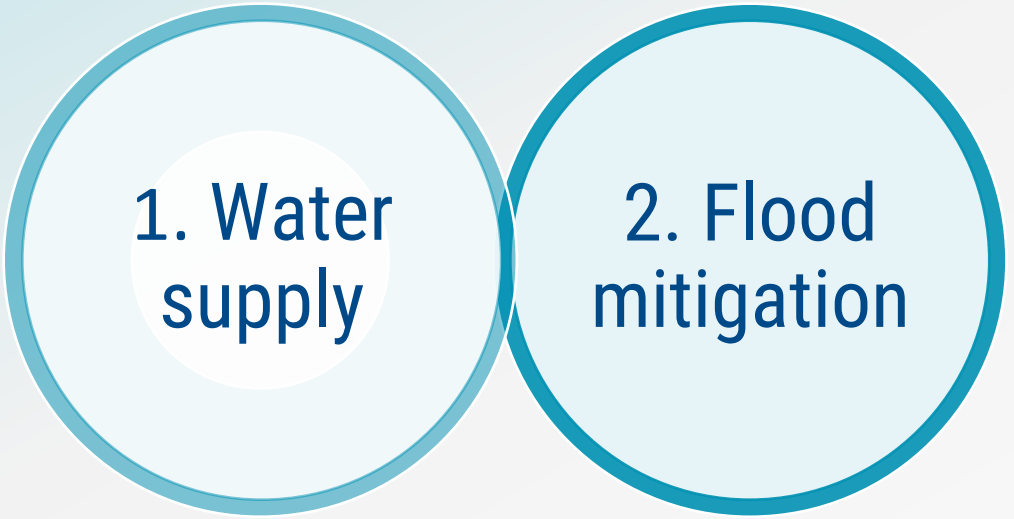
Q1 – Q4*	**Amplification of geotechnical drilling program**
	• Continuation and amplification of drilling rigs/crews for drilling of drain holes from dam galleries deep into foundation
	• Site based:
	  • Saddle dam (current)
	  • Left abutment (continuing)
	  • Drilling from barge downstream of the dam
	  • Right abutment
	  • Upper right abutment in vicinity of proposed roadworks

Q2 – Q4*	**Facilities** • Practical completion Core Shed & Temporary Operations Facility • Village houses refurbishment commencing (4/5) • Planning for contractor laydown site and construction camp site/s
Q2 – Q4*	**Hydromechanical** • Gate detailed design completed, manufacturing commencing • Procurement of hydromechanical contractor, commencement of fabrication of lifting frame for radial gate removal, limpet coffer dam, new bulkheads
Q3 – Q4*	**Roads & Civil early works (including downstream coffer dam)** • Procure contractor to construct minimum clearing access tracks on left abutment • Progress design and commence procurement process for Roads & Civil early works contractor

**Timings indicative and to be confirmed*

Dam Capability and Operations – Existing & Proposed

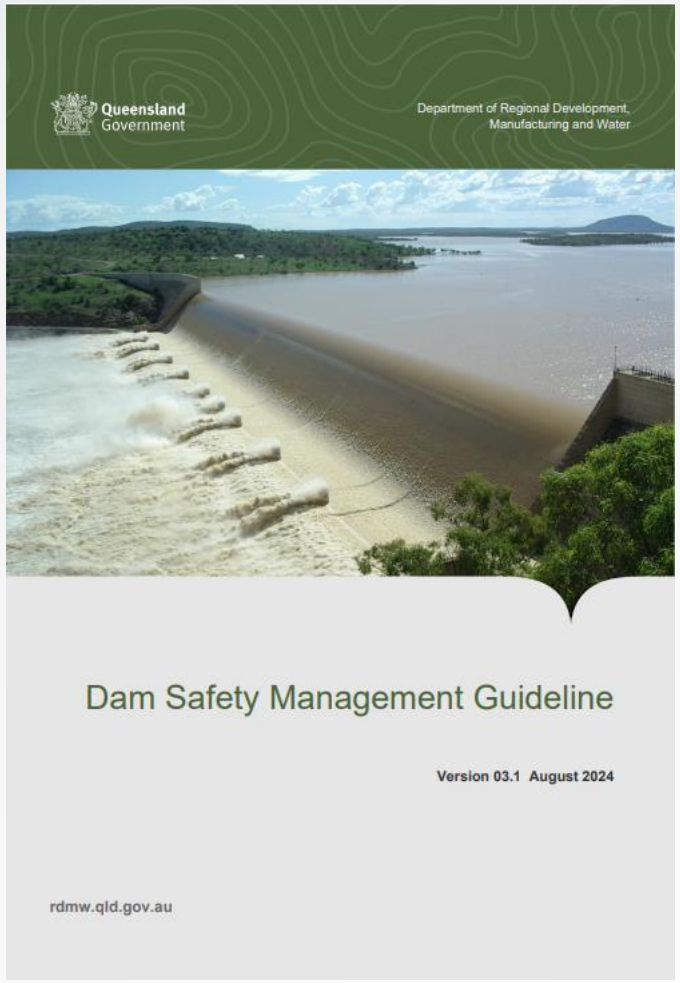
Somerset Dam – Multi-purpose storage



Somerset Dam is also a key area for recreation.

Regulatory requirements

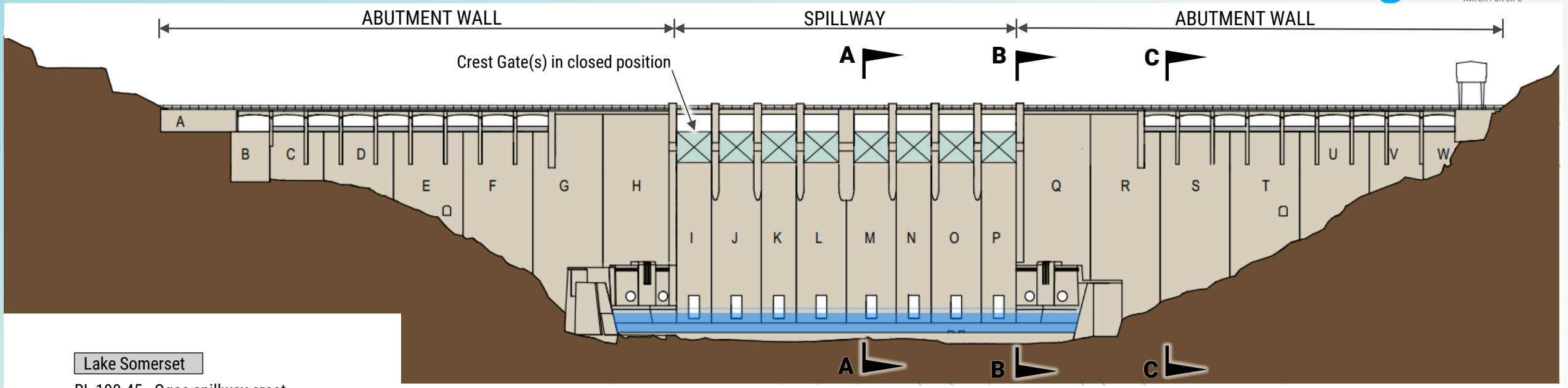
- In Queensland, dam owners are responsible for the safety of their dams under the Water Supply (Safety and Reliability) Act 2008.
- The Act also defines a referable dam, which is then regulated under this Act for dam safety purposes. **A referable dam is one that would, in the event of failure, put a population of two or more people at risk**.
- Somerset Dam has been failure impact assessed as a Category 2 referable dam, meaning **more than 100 people** are at risk if the dam fails.
- The Queensland Dam Safety Regulator
  - Issues dam safety conditions that must be complied with, for each referable dam (such as Somerset Dam)
  - Requires referable dams be upgraded to meet modern engineering and safety guidelines not later than 1 October 2035.



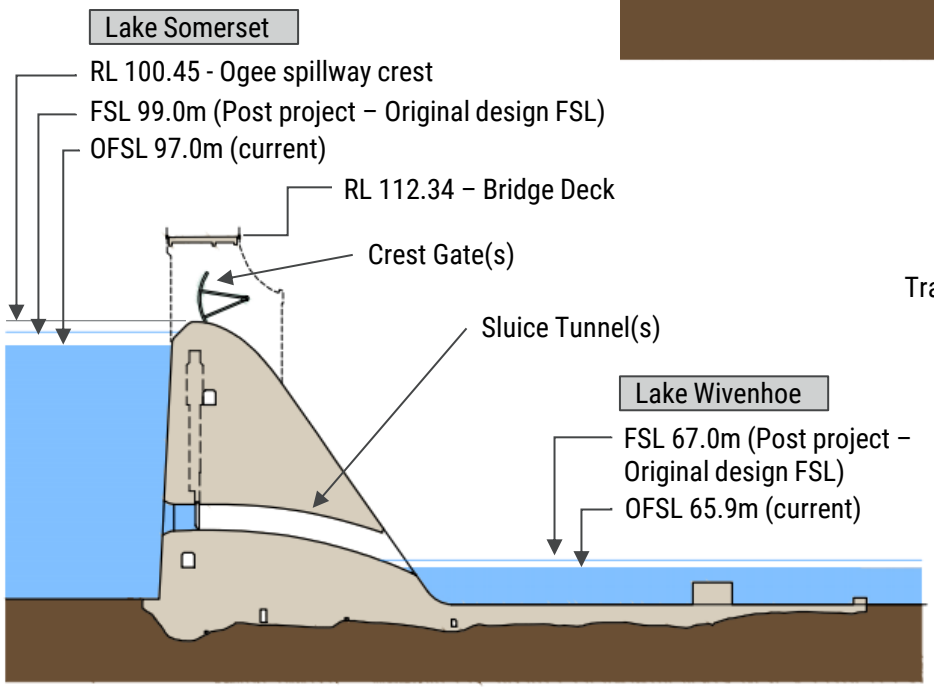
Water supply

- Somerset Dam supplies water to Brisbane, Gold Coast and Logan City regions via Wivenhoe Dam and the mid-Brisbane River (with treatment at Mt Crosby water treatment plants).
- Design Full supply level: 99m AHD (379,849 ML).
- The current operational full supply level of the dam is 80% of its original at 97m AHD, two metres lower than normal (302,749 ML).
- This is a temporary reduction to assist with the management of dam safety.

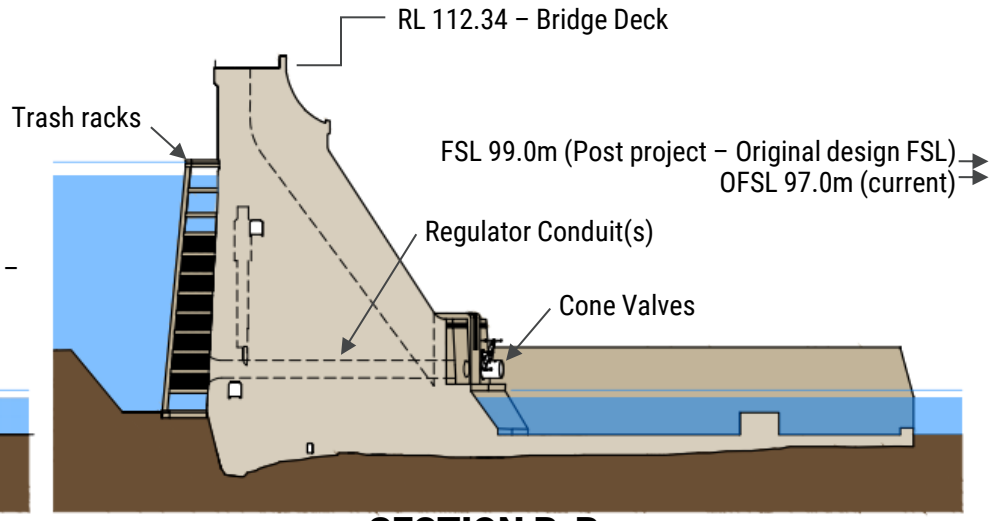
Somerset Dam (Existing) : Dam Structure, Water Storage & Water Security



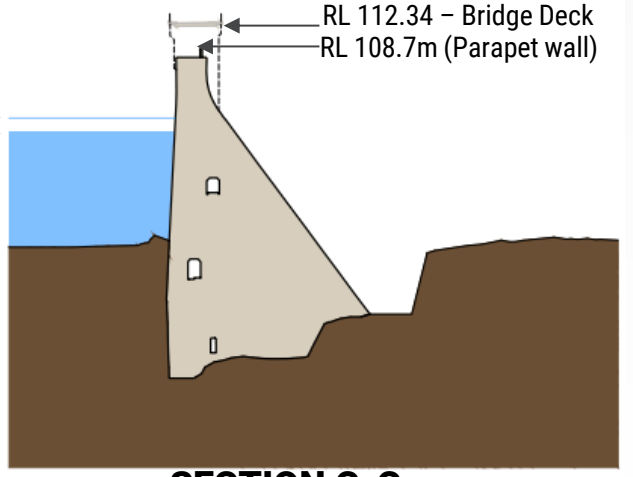
ELEVATION – LOOKING UPSTREAM



SECTION A-A

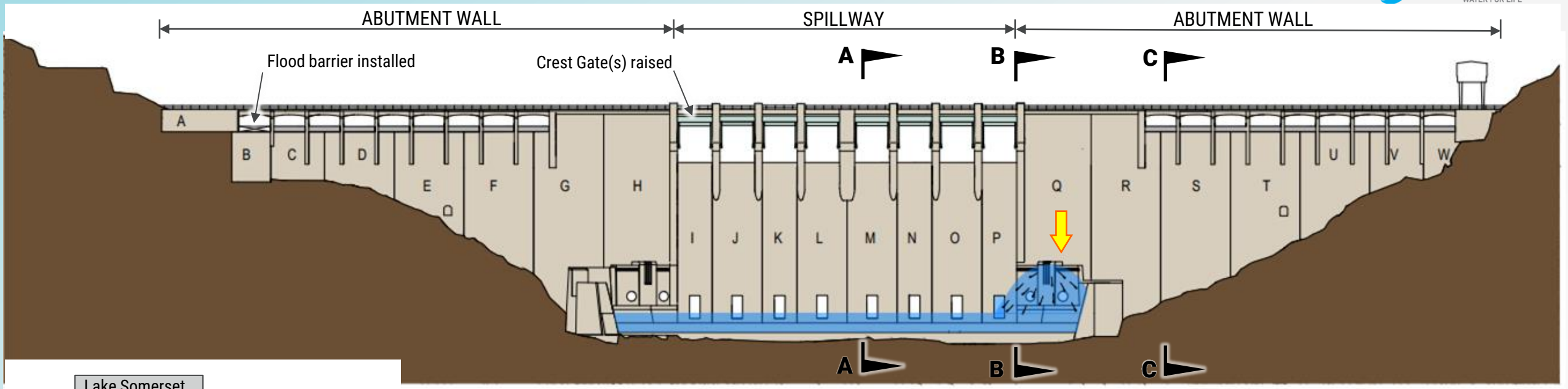


SECTION B-B

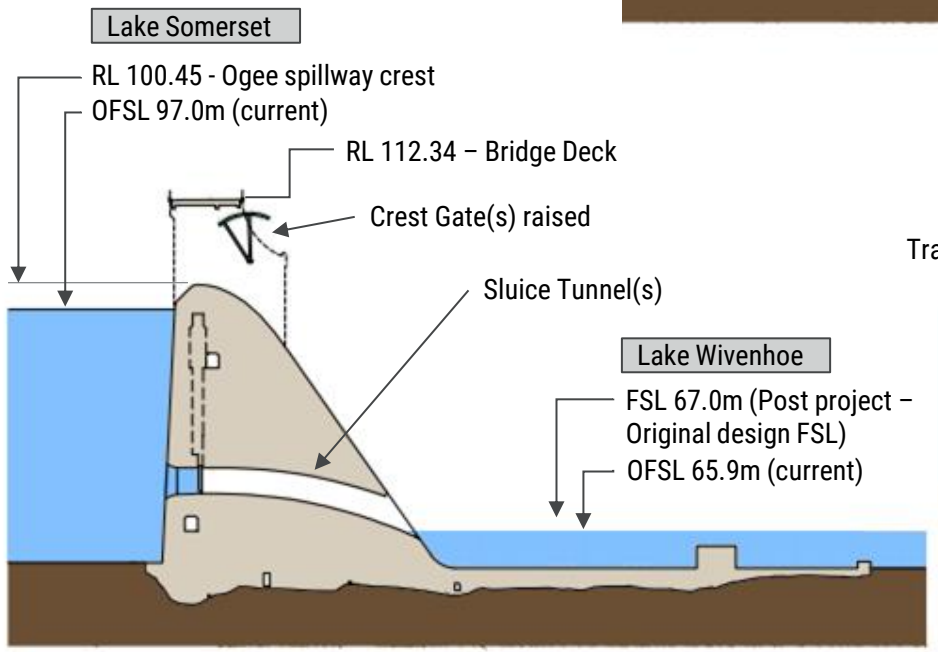


SECTION C-C

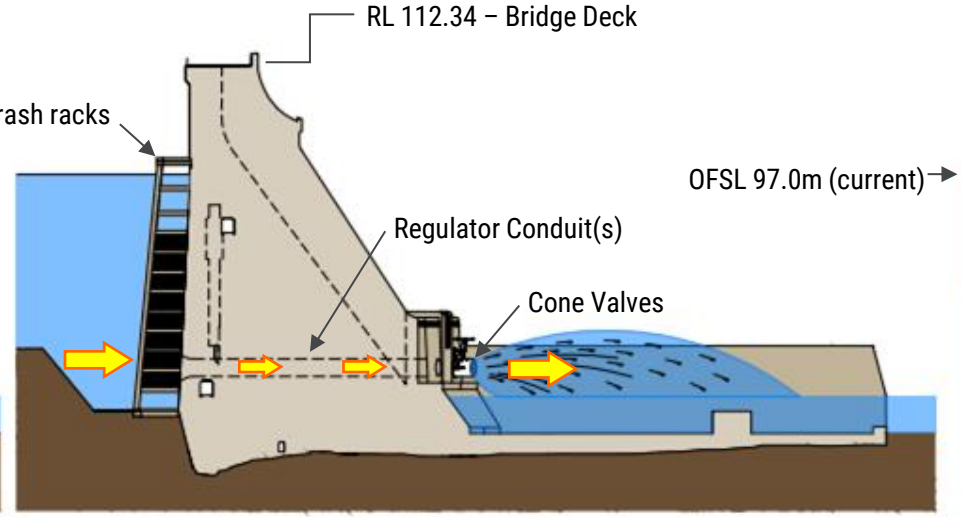
Somerset Dam (Existing) : Regulated Releases (through Cone Valves)



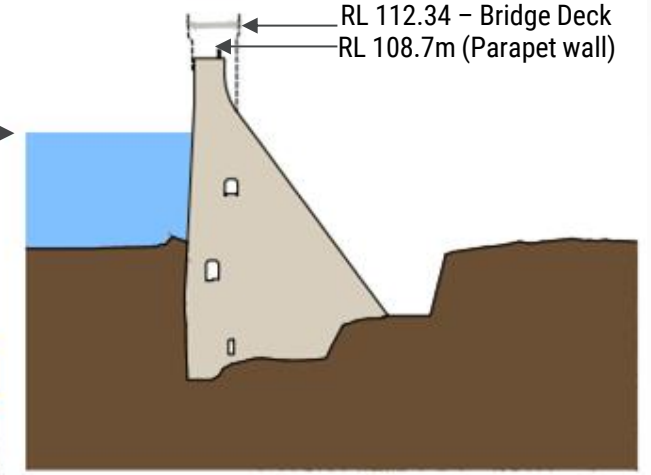
ELEVATION – LOOKING UPSTREAM



SECTION A-A



SECTION B-B



SECTION C-C

Flood mitigation

Flood operations

- The Flood Operations Manual is approved by the Water Minister

Types of floods

River flooding

- A result of heavy rainfall
- Occurs when there is too much water to be contained in creeks and rivers

Flash flooding

- Can be caused by severe storms with high rainfall or overflowing storm water pipes combined by high rates of overland flow

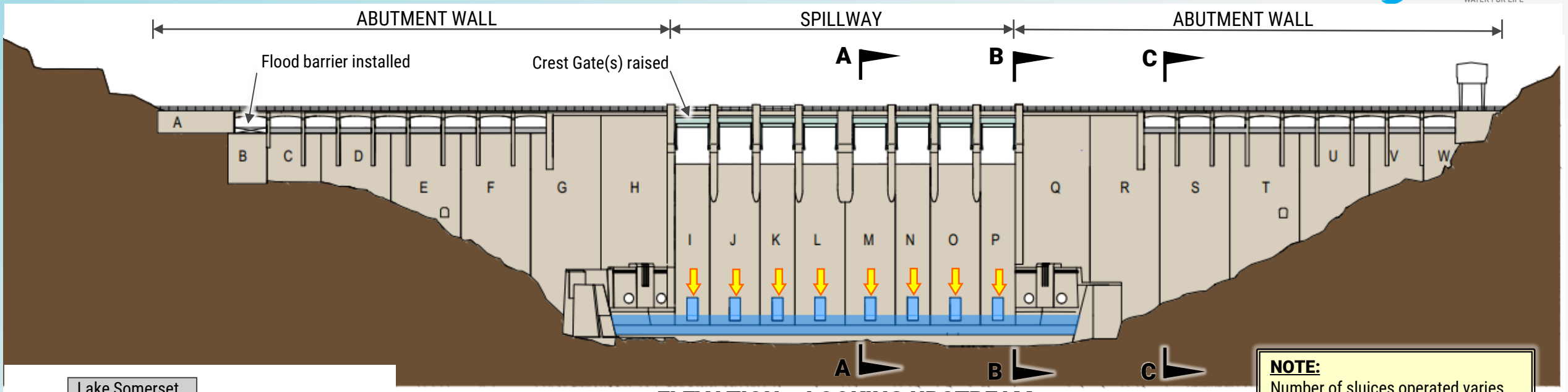
Storm surge flooding

- An abnormal rise in water above typical sea tide levels, often as a result of a storm

Storm tide flooding

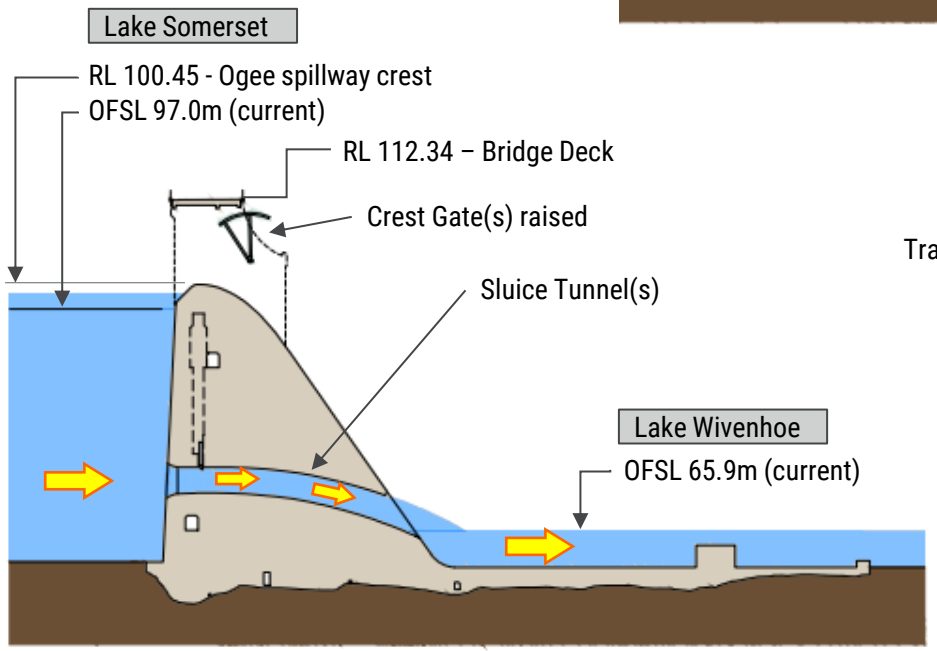
- The water level that results from a storm surge, combined with an abnormally high tide

Somerset Dam (Existing) : Flood Operations – Sluice Only

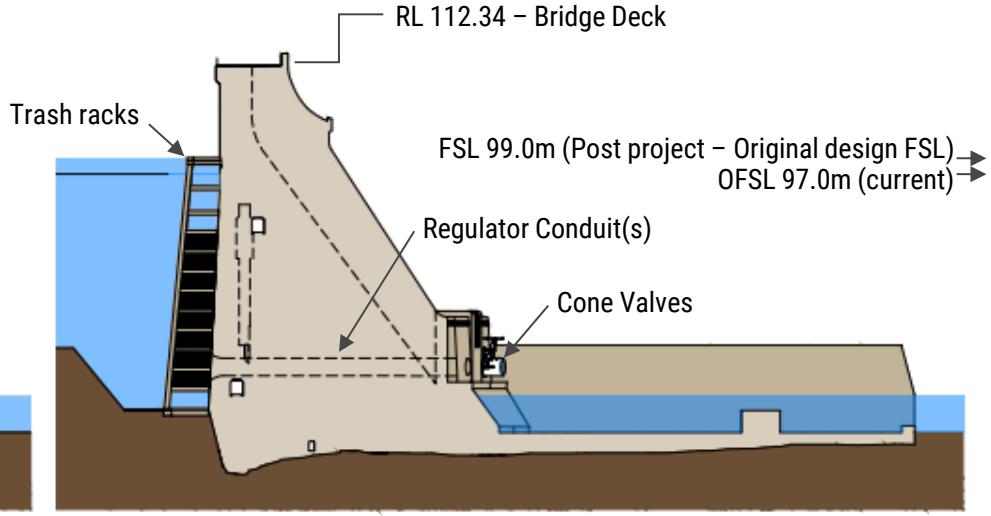


ELEVATION – LOOKING UPSTREAM

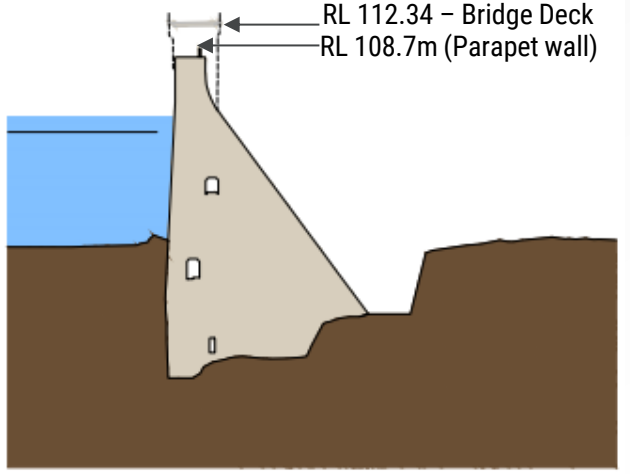
NOTE:
Number of sluices operated varies.
Opening sequence L-M-K-N-J-O-I-P.



SECTION A-A

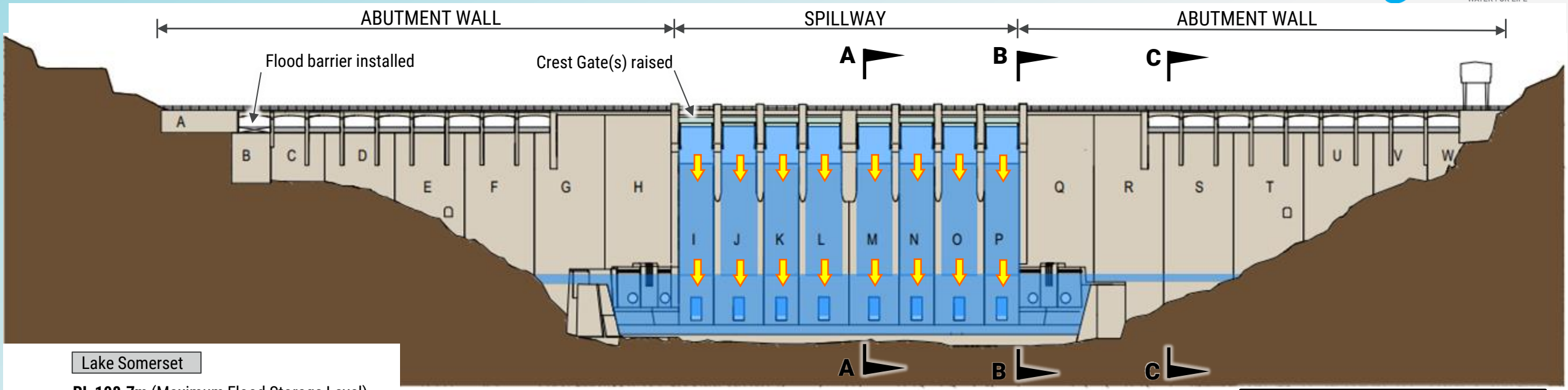


SECTION B-B



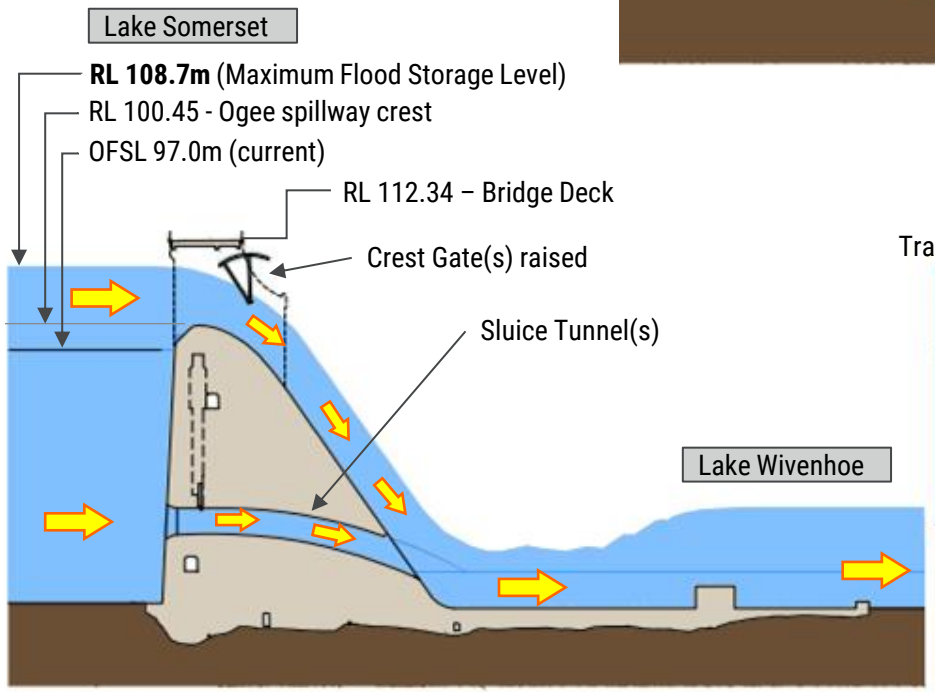
SECTION C-C

Somerset Dam (Existing) : Flood Operations – Sluice + Crest Overflow

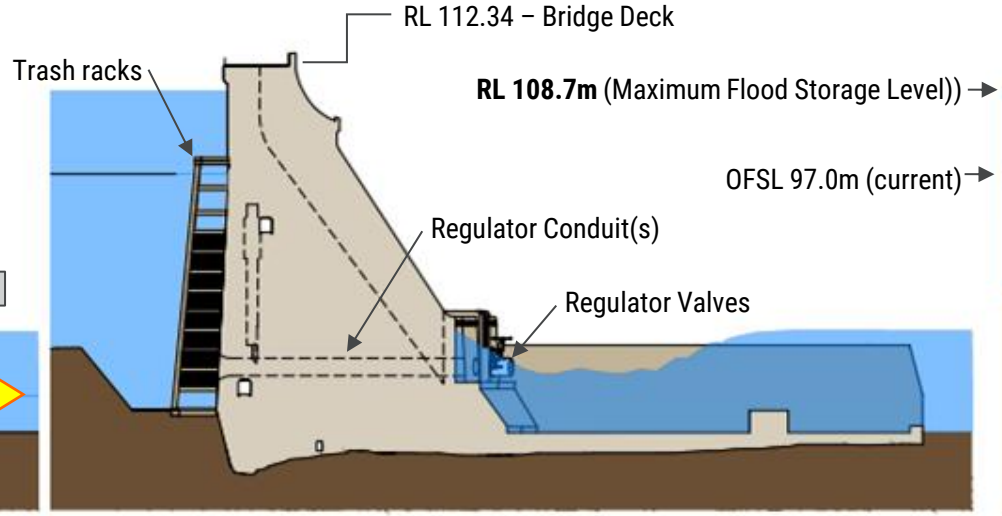


ELEVATION – LOOKING UPSTREAM

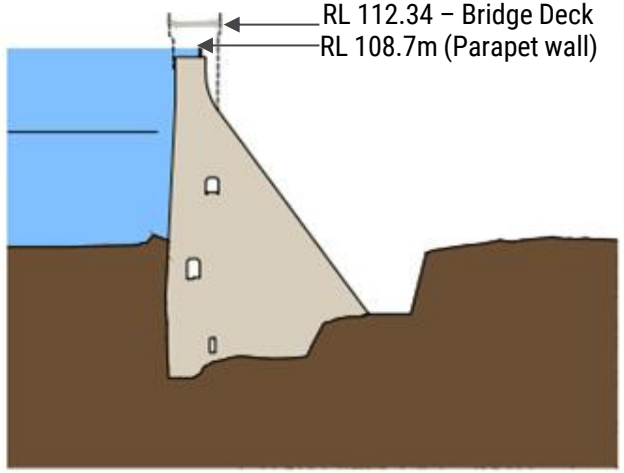
NOTE:
RL 108.7m Maximum flood storage level



SECTION A-A



SECTION B-B



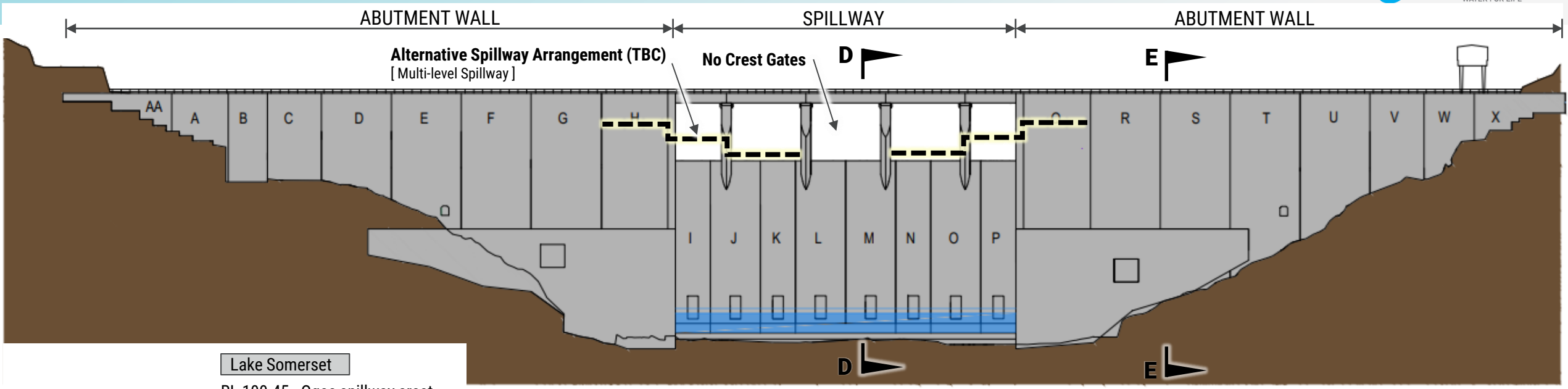
SECTION C-C

Somerset Dam Improvement Project (SDIP)

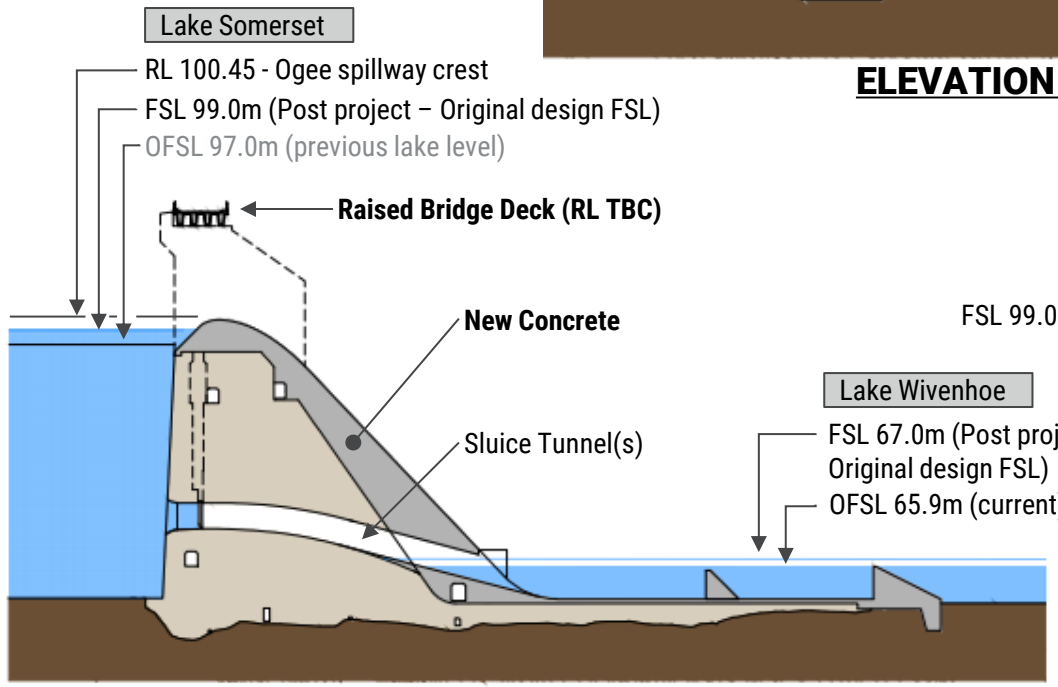
Dam Safety

- Since the dam was completed in 1959, dam engineering and forecast rainfall modelling information has developed significantly, leading to upgrades.
- In very extreme floods, floodwaters may overtop the existing Somerset Dam wall structure in its current configuration, which is a dam safety risk.
- The dam wall is being upgraded to safely pass extreme wet weather flood events larger than those events experienced in the past, such as the 2022 flood.
- As part of the proposed upgrade, the upgraded dam wall will be raised on either side of the spillway to help protect against this overtopping risk.
- The upgrade design options will be flexible enough to balance the future needs of water supply storage, flood mitigation, recreation and climate change.

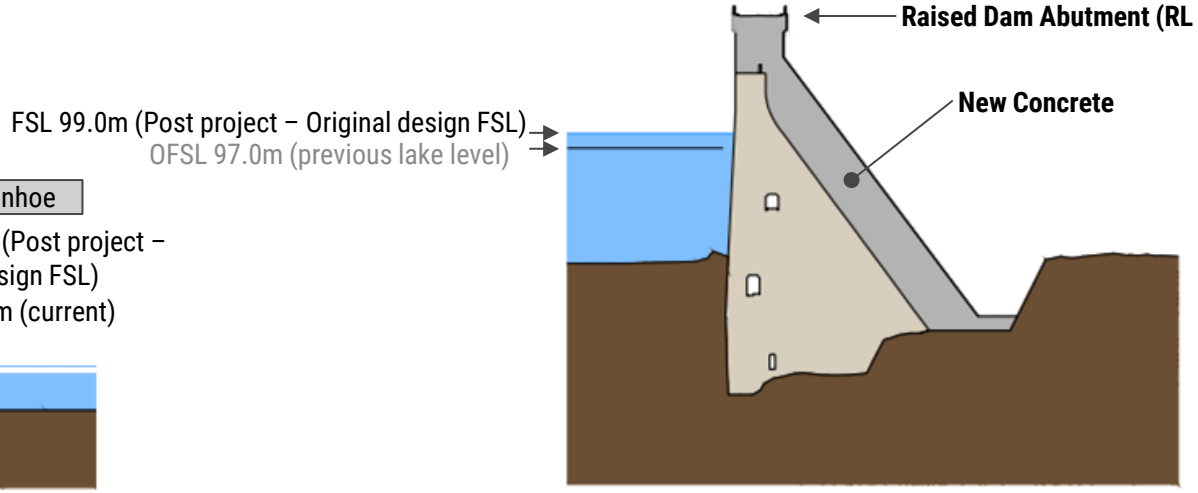
Somerset Dam : Proposed Arrangement



ELEVATION – LOOKING UPSTREAM



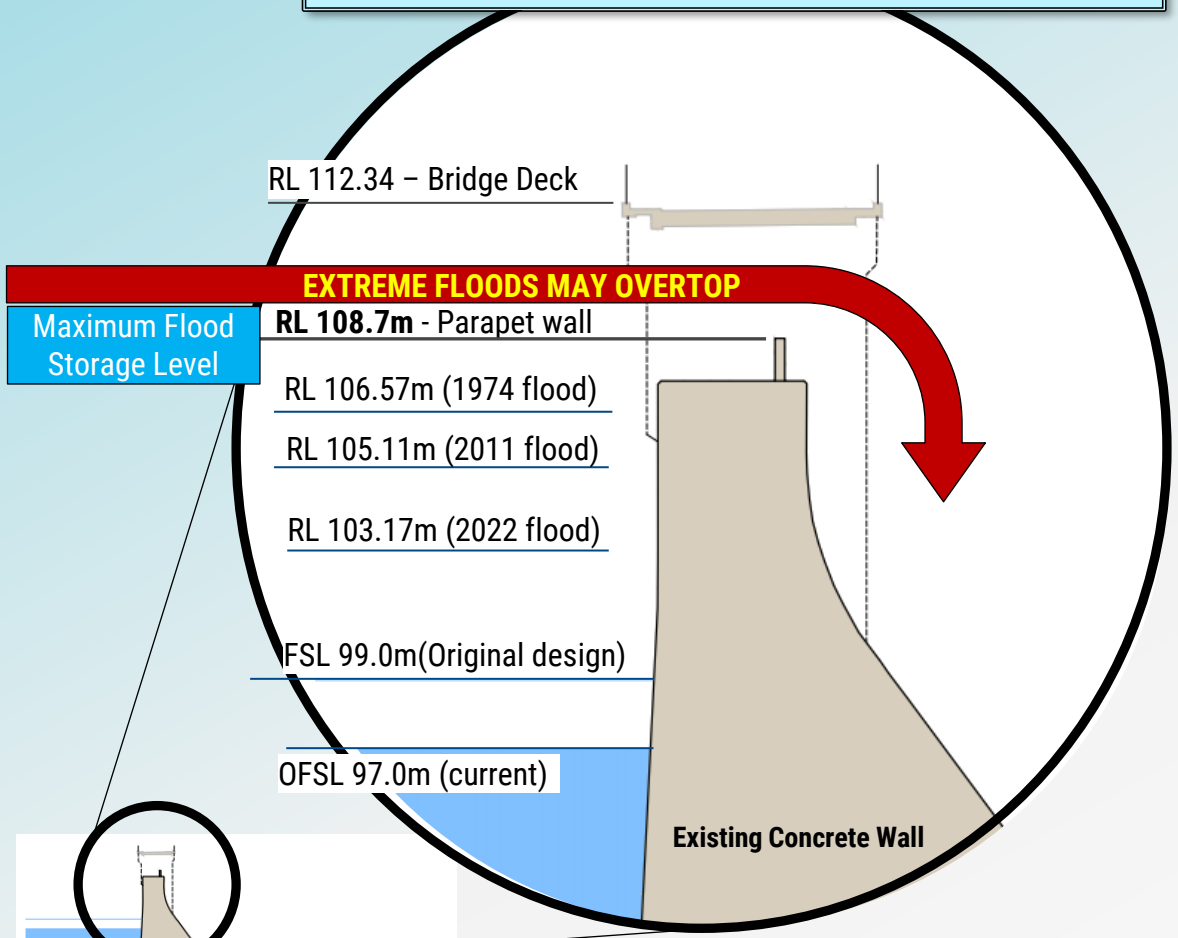
SECTION D-D

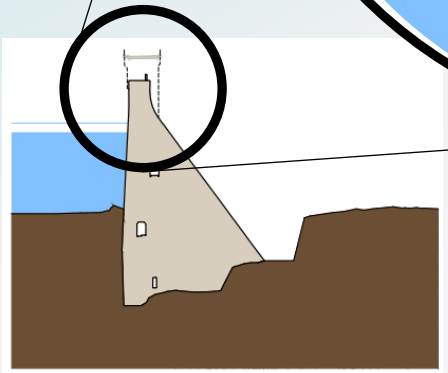


SECTION E-E

Somerset Dam : Existing Dam vs Proposed Dam Arrangement

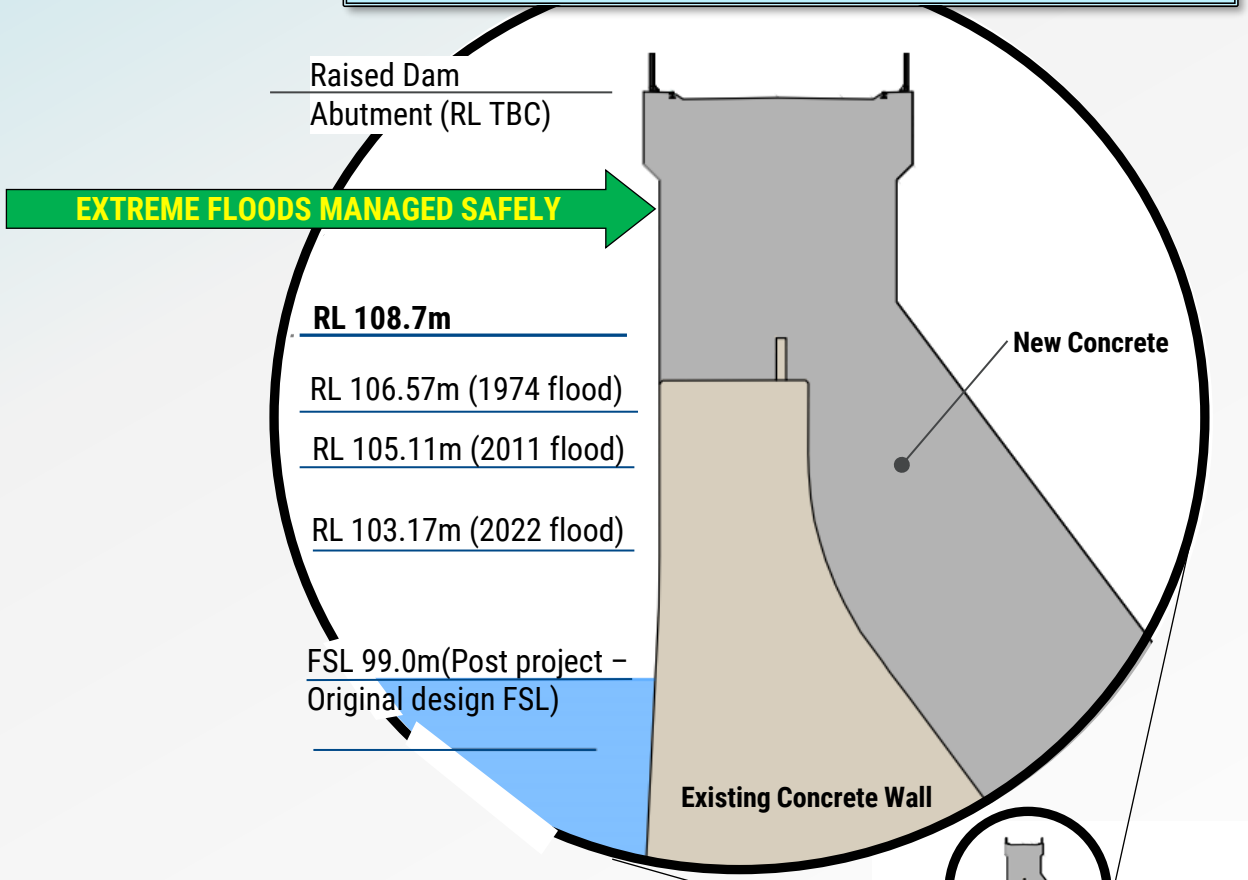
EXISTING DAM ARRANGEMENT

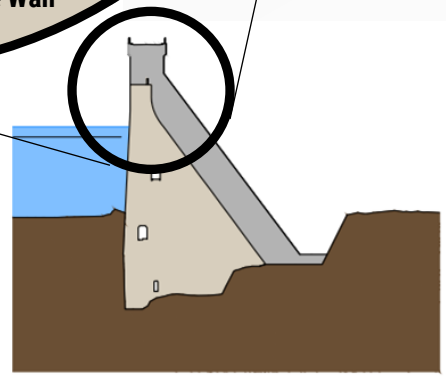




ABUTMENT SECTION

PROPOSED DAM ARRANGEMENT



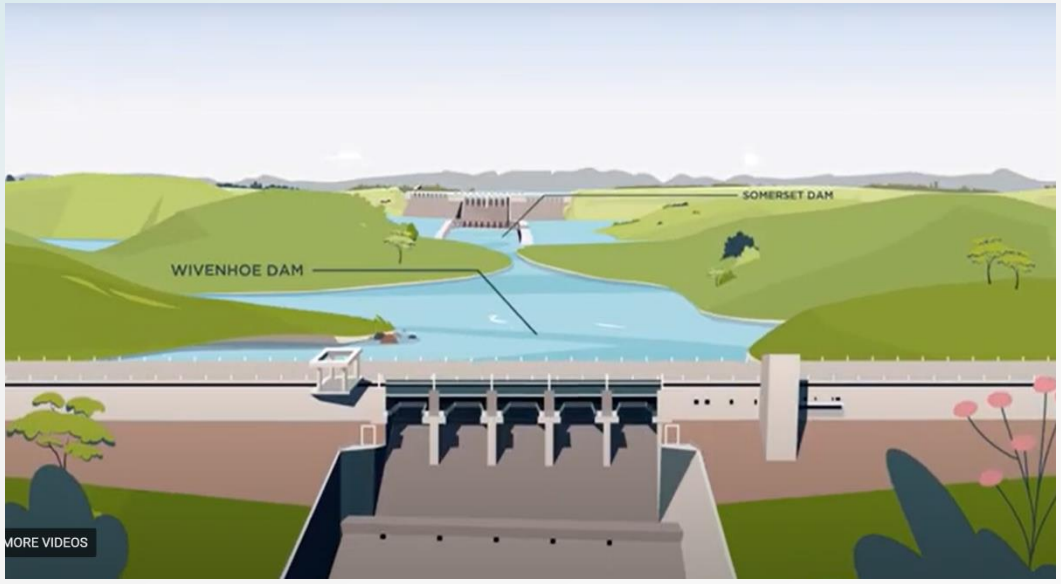


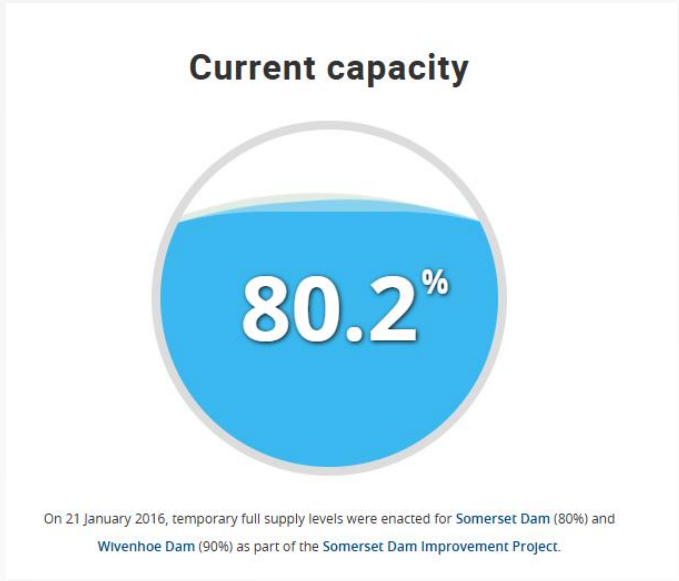
ABUTMENT SECTION

Water supply

Post completion of upgrade

- There is **no intent to increase** the water supply capacity of Lake Somerset.
- It is intended the original design ‘full supply level’ of Lake Somerset will be reinstated once the upgrade is completed, to 99m AHD.

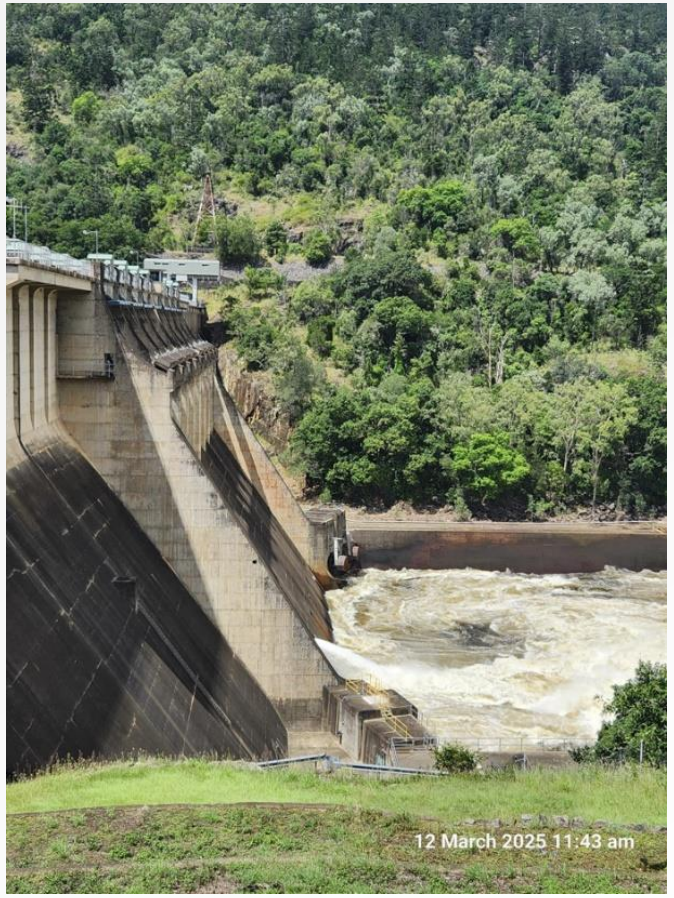




Flood operations

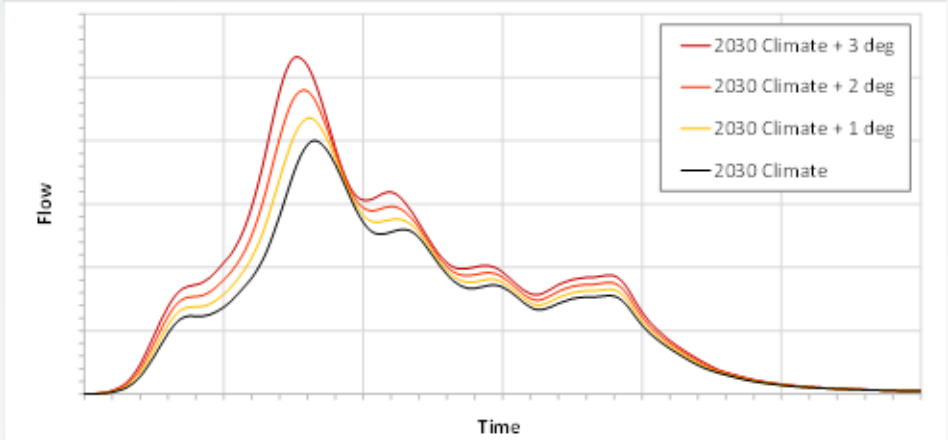
Post completion of SDIP

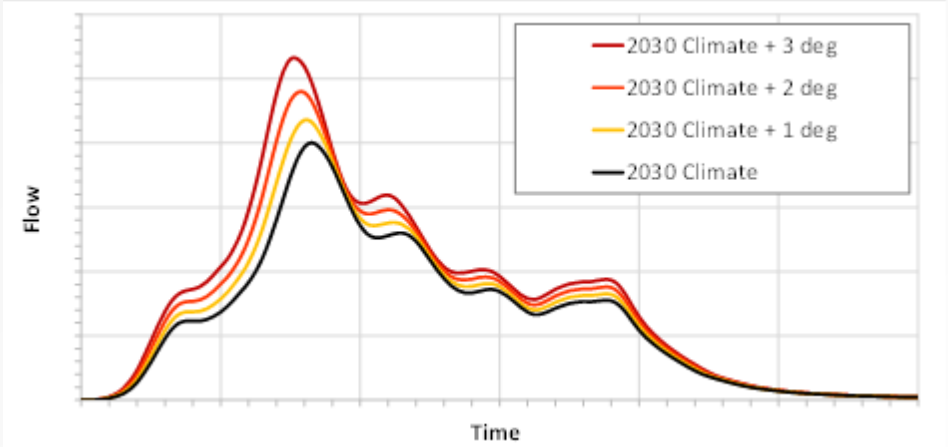
- The upgraded dam is planned to be operated with similar water supply levels and flood operation procedures (consistent with the Flood Operations Manual) that were in place up until 2016.
- With similar operations, there would be no significant change in impact on upstream (including in Kilcoy and surrounds) or downstream flooding during common floods to rare floods.
- For an extreme wet weather event, the accumulation of water above the spillway may lead to higher upstream flood levels.
- An extreme flood event also has an extremely low probability.
- Floods of this magnitude have rarely been recorded in South East Queensland, and while these are extremely rare events, they need to be planned for.



Climate change and hydrology modelling

- As a base, Seqwater adopts the climate of 2030.
- The most current climate science found that when global warming takes place the weather becomes more ‘extreme’. This means:
  - Periods of drought will occur more frequently and likely last longer
  - Extreme rainfall events will become more frequent and rainfall depth would increase
- The rate at which global warming takes place is difficult to predict, hence a range of warming scenarios is modelled.
- This enables a suitable dam design for today and adaptive design elements that will allow for further climate change.

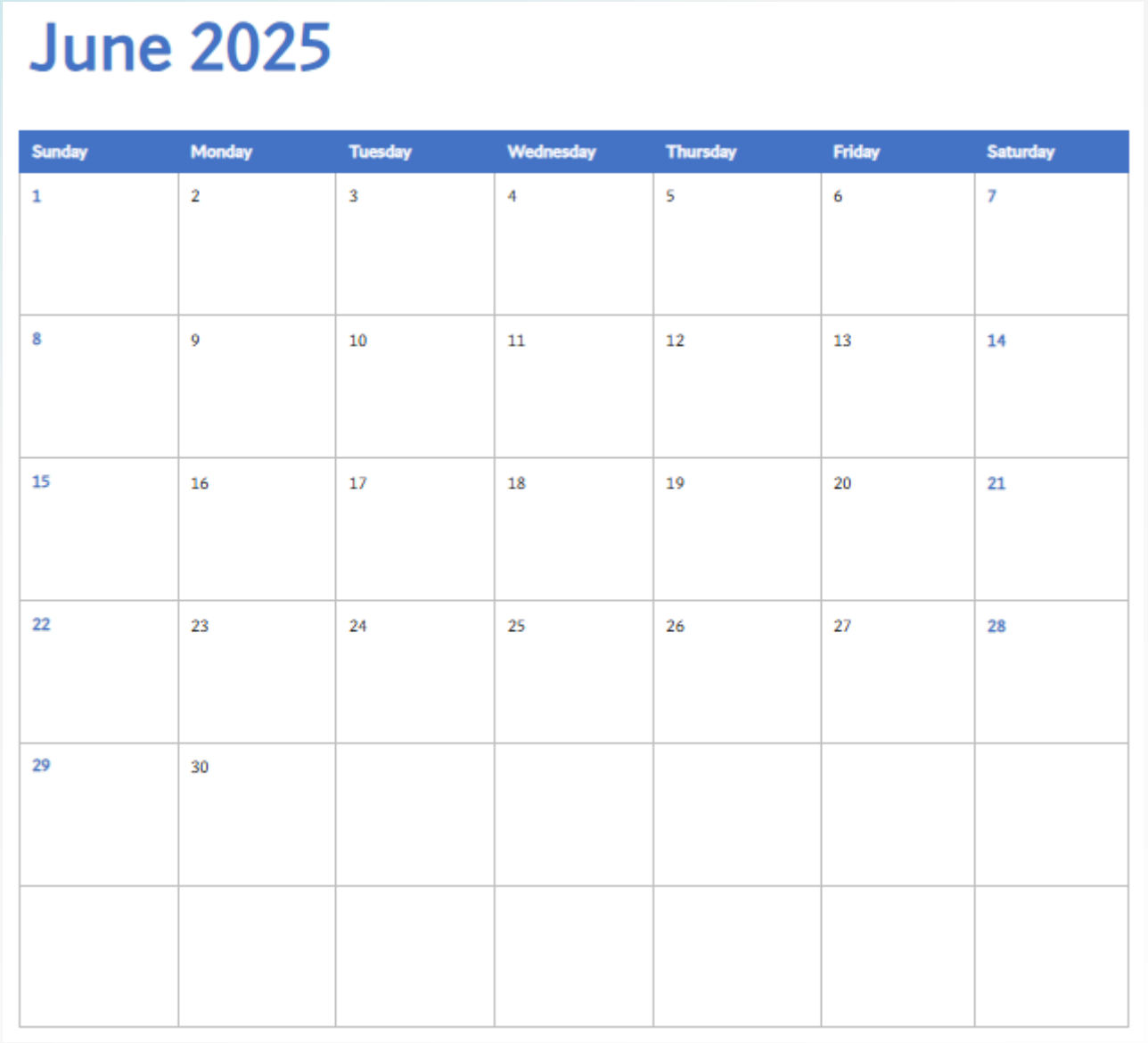




Conclusion

seqwater
WATER FOR LIFE

1. Key takeaways
2. Next meeting date



June 2025

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30					

Thank you

seqwater
WATER FOR LIFE